

In the specification:

Please replace paragraph 2, containing equation 18, on page 24 as follows:

Comparing Eqns. (15) and (17) and since  $T_2 = 2T_{ON}$  at the peak of the sine waveform,

$$R_R C \frac{V_E}{V_R} = \frac{T_2}{\frac{L_1}{L_2} - \left( \frac{L_1}{L'} \right) \times \left( \frac{N_1}{N_2} \right) \times \left( \frac{V_o}{V_m \sin \omega t} \right)} \quad (18)$$

$$R_R C \frac{V_E}{V_R} = \frac{T_2}{\frac{L_1}{L_2} - \left( \frac{L_1}{L'} \right) \times \left( \frac{N_1}{N_2} \right) \times \left( \frac{V_o}{V_m \sin \omega t} \right)} \quad (18)$$

Please replace paragraph one, containing equation 30, on page 36 as follows:

Those of skill in the art will appreciate that the EPROM is loaded with data corresponding to the following formula derived earlier:

$$R_R C \frac{V_E}{V_R} = \frac{T_2}{L_1/L_2 - (L_1/L') \times (N_1/N_2) \times \left( \frac{V_o}{V_m \sin \omega t} \right)} \quad (30)$$

$$R_R C \frac{V_E}{V_R} = \frac{T_2}{L_1/L_2 - (L_1/L') \times (N_1/N_2) \times \left( \frac{V_o}{V_m \sin \omega t} \right)} \quad (30)$$

It may be re-iterated that the stored EPROM data does not represent the instantaneous values of the input AC voltage waveform itself. Rather, it represents a sine-weighted string of duty cycles that the MOSFET should operate with at various time instants of the input AC waveform, so that a sinusoidal current is drawn from the input AC supply. The data for the first quarter of the rectified sine wave (0° to 90°) is given in Table 1 (going from P to Q). For the second quarter of the sine wave (90° to 180°) the same data are programmed in reverse order, starting from the location 0060H, going backwards (going from Q to P). The locations still remaining un-programmed, are programmed with C4H.

Please replace paragraph 3, containing equation 39, on page 38 as follows:

Since, Eqn. (38) is independent of  $f$ , this equation is valid for  $\theta_1 < \theta < \pi/2$ , and

$$D = \frac{V_m \sin \theta_1}{\sqrt{8 \left\{ 2.5 V_m \sin \theta - 2 \left( \frac{N_1}{N_2} \right) V_0 \right\}}} \quad \text{for } \theta_1 < \theta < (180 - \theta_1) \quad (39)$$

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provides the equation for the duty ratio in Phase 2.